

Notice of Allowability

Application No.

10/731,745

Examiner

G. Nagesh Rao

Applicant(s)

YANG ET AL.

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/24/06.
2. ☒ The allowed claim(s) is/are 2-14, 16-23, and 25-37.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 11/12/06.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Continued Examination Under 37 CFR 1.114

1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/24/06 has been entered.

EXAMINER'S AMENDMENT

2) An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Kramer on 11/1/06.

The application has been amended as follows:

IN THE CLAIMS:

Please Amend the following:

In claim 2 please replace numerals "4,5, or 6" with --1,2, or 5--

In claim 3 please replace numerals "4,5, or 6" with --1,2, or 5--

In claim 5 (Page 2 Line 26) please insert the following text after “A method”,
--as recited in claim 1--.

In claim 6 please replace numerals “1 or 5” with --1 or 2--

In claim 7 please replace numeral “6” with --3--

In claim 9 please replace numerals “4,5, or 6” with --1,2, or 5--

In claim 10 please replace numerals “4,5, or 6” with --1,2, or 5--

In claim 11 please replace numeral “10” with --9--

In claim 12 please replace numerals “4,5, or 6” with --1,2, or 5--

In claim 13 (Page 4 Line 20) please insert the following limitation after
“structure”, --; wherein said gallium nitride (GaN) sheath is deposited over said
nanowire by epitaxial casting-- .

In claim 14 please replace numeral “13” with --12--

Delete claim 15.

In claim 16 (Page 5 Line 1) please replace “15” with the numeral --13--.

In claim 17 please replace numeral “16” with --14--

In claim 18 please replace numeral “13” with --12--

In claim 19 please replace numeral “13” with --12--

In claim 20 please replace numeral “19” with --17--

In claim 21 please replace numeral “13” with --12--

In claim 22 please replace numeral “21” with --19--

In claim 23 (Page 6 Line 11) please insert the following limitation after the phrase “single-crystalline material”, --; wherein said sheath comprises an epitaxial casting-- .

In claim 25 please replace numeral “23” with --21--

In claim 26 please replace numeral “23” with --21--

In claim 27 please replace numeral “23” with --21--

In claim 28 please replace numeral “27” with --24--

In claim 29 please replace numeral “28” with --25--

In claim 30 (Page 7 Line 10) please insert the following limitation after the phrase “nanotube structure;”,

--wherein said sheath comprises an epitaxial casting;-- .

In claim 31 please replace numeral “30” with --27--

In claim 32 please replace numeral “31” with --28--

In claim 33 please replace numeral “30” with --27--

In claim 34 please replace numeral “33” with --30--

In claim 35 please replace numeral “30” with --27--

In claim 36 please replace numerals “4,5, or 23” with --1,2, or 21--

In claim 37 please replace numeral “36” with --33--

Allowable Subject Matter

3) The following is an examiner's statement of reasons for allowance: Upon further review of the prior art in light of arguments put forth by applicants and claims as amended to particularly define the scope of the invention. Claims 2-14, 16-23, and 25-37 are allowable for the reasons of record.

Applicants amendment to the claims to include the limitation referring to the process of making these structures via an "epitaxial casting" means gives weight to the claims in their inventive scope. Epitaxial casting in its broadest sense refers to layered crystal orientation between the top and bottom materials disposed onto one another. The prior art Hoffman 512 does not teach single crystal or highly orientated polycrystalline formation which therefore cannot be considered to read on epitaxy formation, and the application of Empedocles 823 lacks the teachings of creating this "sacrificial template" and "casting" method for making these nanotube structures, therefore leading to an inappropriate combination based on hindsight for the 103 rejection. Therefore examiner feels the case is in condition for allowance, and notes that for further information to please see Attorney's remarks.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should

preferably accompany the issue fee. Such submissions should be clearly labeled
“Comments on Statement of Reasons for Allowance.”

Any inquiry concerning this communication or earlier communications from
the examiner should be directed to G. Nagesh Rao whose telephone number is
(571) 272-2946. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the
examiner’s supervisor, Yogendra Gupta can be reached on (571)272-1316. The
fax phone number for the organization where this application or proceeding is
assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR
only. For more information about the PAIR system, see [http://pair-
direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system,
contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you
would like assistance from a USPTO Customer Service Representative or access to
the automated information system, call 800-786-9199 (IN USA OR CANADA) or
571-272-1000.

GNR


ROBERT DAVIS
PRIMARY EXAMINER
GROUP 1300-1722

11/21/06